इंटरनेट मानक

Disclosure to Promote the Right To Information

Whereas the Parliament of India has set out to provide a practical regime of right to information for citizens to secure access to information under the control of public authorities, in order to promote transparency and accountability in the working of every public authority, and whereas the attached publication of the Bureau of Indian Standards is of particular interest to the public, particularly disadvantaged communities and those engaged in the pursuit of education and knowledge, the attached public safety standard is made available to promote the timely dissemination of this information in an accurate manner to the public.

"जानने का अधिकार, जीने का अधिकार"
Mazdoor Kisan Shakti Sangathan
"The Right to Information, The Right to Live"

"पुराने को छोड नये के तरफ"
Jawaharlal Nehru
"Step Out From the Old to the New"

IS 7162 (1973): Waxed cartons for packaging of ice cream [CHD 15: Paper and its products]

"ज्ञान से एक नये भारत का निर्माण"
Satyanarayan Gangaram Pitroda
"Invent a New India Using Knowledge"

Act Number 22 of 2005
The Indian Parliament
RIGHT TO INFORMATION

Made Available By
Public.Resource.Org

"ज्ञान एक ऐसा खजाना है जो कभी चुराया नहीं जा सकता है"
Bhartṛhari—Nītiśatakam
"Knowledge is such a treasure which cannot be stolen"

BLANK PAGE

BRUTUM FULMEN

IGNORANTIA JURIS NON EXCUSAT

PROTECTED BY COPYRIGHT

IS : 7162 - 1973
(Reaffirmed 1999)

Indian Standard

SPECIFICATION FOR WAXED CARTONS FOR PACKAGING OF ICE-CREAM

UDC 621·798·142 [676·263·8·064·2] : 663·674

© *Copyright* 1974

INDIAN STANDARDS INSTITUTION
MANAK BHAVAN, 9 BAHADUR SHAH ZAFAR MARG
NEW DELHI 110001

[redacted] Gr 3

April 1974

Indian Standard

SPECIFICATION FOR WAXED CARTONS FOR PACKAGING OF ICE-CREAM

Paper and Flexible Packaging Sectional Committee, MCPD 14

Chairman	*Representing*
Shri K. Viswanathan	Rolls Print Co Private Ltd, Calcutta
Members	
Shri A. B. Ajmera	Card Board Box Mfg Company, Calcutta
Shri C. C. Ajmera (*Alternate*)	
Shri S. Bandopadhyay	Development Commissioner, Small Scale Industries, New Delhi
Shri P. L. Burman	Joint Committee of the Paper Industry, Calcutta
Shri Raj K. Chauhan	Indian Confectionery Manufacturers' Association, Calcutta
Deputy Director	Railway Board (Ministry of Railways)
Shri B. N. Ghosh	Federation of Corrugated Box Manufacturers' Association, Bombay
Shri Harbhagwandas P. Arora (*Alternate*)	
Shri P. S. Hariharakrishnan	The Travancore Rayons Limited, Rayonpuram (Kerala)
Shri S. K. Keshava	India Tobacco Company Limited, Calcutta
Shri R. C. Sarin (*Alternate*)	
Shri R. L. Khanna	Ministry of Defence (DGI)
Shri D. P. Ghosh (*Alternate*)	
Shri K. R. Krishnaswami	Indian Explosives Limited, Calcutta
Shri A. E. Ladhabhoy (*Alternate*)	
Shri S. K. Malhotra	Indian Paper Makers Association, Calcutta
Shri Man Mohan Singh	Forest Research Institute and Colleges, Dehra Dun
Shri N. B. Menesse	Hindustan Lever Limited, Bombay
Shri P. K. Bose (*Alternate*)	
Dr H. B. N. Murthy	Jardine Henderson Limited, Calcutta
Dr A. N. Nayer	Packaging & Wood Products Consultancy Service, Kanpur
Shri P. R. Parekh	Solid Containers Limited, Bombay
Shri A. N. Chokshi (*Alternate*)	
Shri V. B. Pathak	Indian Plastics Federation, Calcutta
Shri J. N. Singh (*Alternate*)	

(*Continued on page* 2)

© *Copyright* 1974
INDIAN STANDARDS INSTITUTION
This publication is protected under the *Indian Copyright Act* (XIV of 1957) and reproduction in whole or in part by any means except with written permission of the publisher shall be deemed to be an infringement of copyright under the said Act.

(*Continued from page* 1)

Members	*Representing*
Shri M. K. Ramasami	Jayant Packaging Private Limited, Madras
Shri A. N. Rao	Directorate General of Technical Development, New Delhi
Dr D. V. S. K. Rao	Federation of Biscuit Manufacturers of India, Delhi
Shri G. V. Rao	Directorate of Standardization (Ministry of Defence)
Shri D. A. Rees	The Metal Box Company of India Ltd, Calcutta
Shri P. R. Seshan (*Alternate*)	
Shri J. C. Shah	Federation of Associations of Small Industries of India, New Delhi
Shri Shumsher Singh	Indian Institute of Packaging, Bombay
Shri P. V. Narayanan (*Alternate*)	
Shri S. Sunder	India Foils Limited, Calcutta
Shri S. P. Chatterjee (*Alternate*)	
Shri T. Purnanandam, Deputy Director (MCPD)	Director General, ISI (*Ex-officio Member*)

Secretary

Shri V. K. Bansal
Assistant Director (MCPD), ISI

Cartons Subcommittee, MCPD 14:1

Convener	
Shri K. L. Taneja	Colour Cartons Limited, Bombay
Members	
Shri C. T. Thadani (*Alternate* to Shri K. L. Taneja)	
Shri K. S. Bhargava	Rohtas Industries Ltd, Dalmianagar
Shri S. S. Manda (*Alternate*)	
Shri J. M. Datta	The Britannia Biscuit Co Ltd, Bombay
Shri K. R. Krishnaswamy	Indian Explosives Limited, Calcutta
Shri P. N. Lal	Orient Paper Mills Ltd, Orissa
Shri G. Sengupta (*Alternate*)	
Shri T. V. S. Manian	India Tobacco Company Limited, Calcutta
Shri N. B. Menesse	Hindustan Lever Limited, Bombay
Shri B. K. Bose (*Alternate*)	
Shri A. S. Narayanan	The Metal Box Company of India Ltd, Bombay
Shri R. C. Shah	Baker and Company Pvt Ltd, Bombay
Shri J. C. Shah (*Alternate*)	
Shri Y. K. Sharma	Forest Research Institute and Colleges, Dehra Dun
Shri Shumsher Singh	Indian Institute of Packaging, Bombay
Shri P. V. Narayanan (*Alternate*)	
Shri V. C. Sood	Indian Tea Association, Calcutta
Shri A. R. Vijayendra Rao	Central Food Technological Research Institute (CSIR), Mysore

Indian Standard

SPECIFICATION FOR WAXED CARTONS FOR PACKAGING OF ICE-CREAM

0. FOREWORD

0.1 This Indian Standard was adopted by the Indian Standards Institution on 10 November 1973, after the draft finalized by the Paper and Flexible Packaging Sectional Committee had been approved by the Marine, Cargo Movement and Packaging Division Council.

0.2 A wide variety of cartons is being used in the country for packing ice-cream. This standard is intended to achieve standardization in the cartons and at the same time ensure safe and hygienic packaging of ice-cream.

0.3 Requirements for ice-cream are covered in IS : 2802-1964*.

0.4 For the purpose of deciding whether a particular requirement of this standard is complied with, the final value, observed or calculated, expressing the result of a test or analysis, shall be rounded off in accordance with IS : 2-1960†. The number of significant places retained in the rounded off value should be the same as that of the specified value in this standard.

1. SCOPE

1.1 This standard specifies requirements for waxed cartons for intimate packaging of 300, 500 and 1 000 ml of ice-cream. Cartons for packing 1 000-ml chocbars are also covered.

2. STYLE

2.1 Unless otherwise specified, the cartons shall conform to tongue and slitlock end style (*see* Fig. 1).

---

*Specification for ice-cream.

†Rules for rounding off numerical values (*revised*).

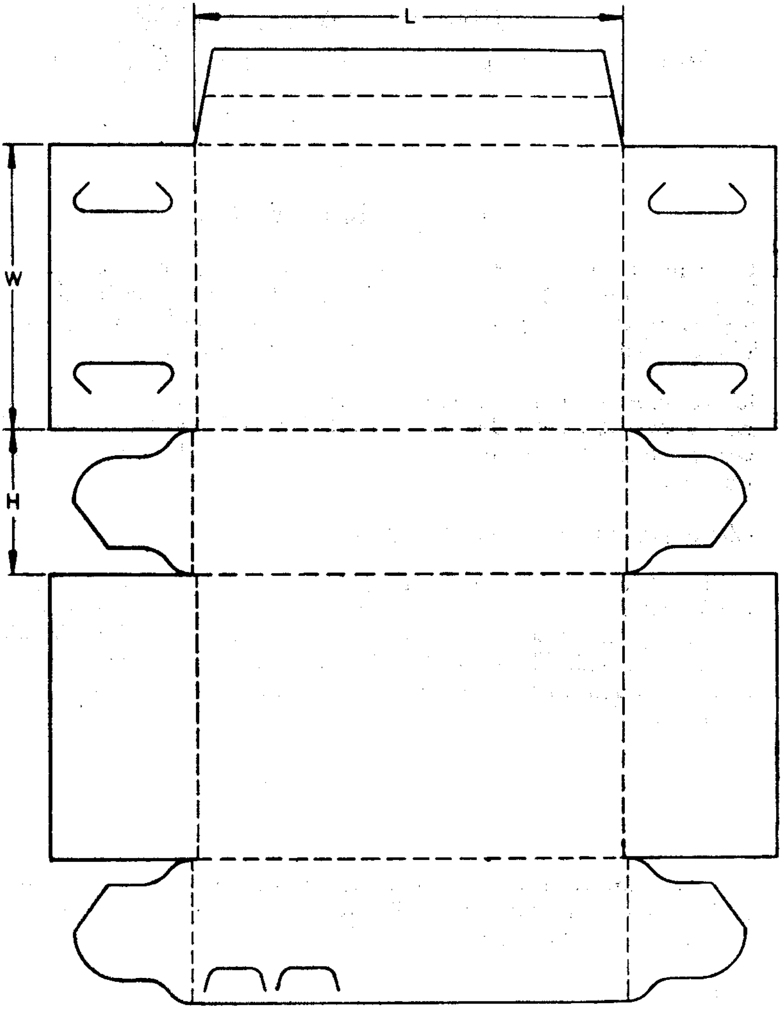

Fig. 1 Waxed Carton for Ice-Cream

3. MATERIALS

3.1 Paperboard

3.1.1 The paperboard used for the cartons shall be a food quality material of solid white or duplex type made from virgin chemical wood pulp and shall conform to IS:1776-1961*. It shall be capable of being waxed.

3.1.2 *Thickness* — The thickness of the unwaxed board shall be not less than 0·30 ± 0·02 mm, when measured in accordance with **7** of IS:1060 (Part I)-1966†.

3.1.3 *Wax Content* — The minimum wax content of the waxed board shall be 5·0 g/m^2 on each side. The total wax content of the board shall be 10·0 g/m^2, when determined by the method given in Appendix A.

3.1.4 *Stiffness* — The stiffness of the waxed board shall be not less than 110 g.cm in machine direction and 40 g.cm in cross direction, when determined by the method prescribed in Appendix B.

3.2 Ink — The ink used for printing the cartons shall be commercially free from toxic metals such as lead and chromium. It shall be suitable for food packaging and shall be fast to light and wax. It shall not have any residual odour, when tested, after waxing, as prescribed in **7** of IS:4006 (Part II)-1972‡. In order to prevent ink set-off, a coating of an edible starch may be applied to the surface of the printed board by spraying.

3.3 Coating Materials

3.3.1 *Wax* — The wax for coating the board shall be extra refined paraffin wax conforming to Type 1 of IS:4654-1968§ with melting point not lower than 60°C.

3.3.2 *Varnish and Lacquer* — The material used shall have no toxic effect.

3.4 Adhesive — The adhesive used to form and seal the carton shall withstand a temperature of — 35°C and shall be non-toxic.

3.5 Odour and Taint — The composition of the board, ink, coating materials and adhesive shall be such as not to have any deleterious effect on the flavour, odour and appearance of the product packed [*see* **7** of IS:4006 (Part II)-1972‡].

---

*Specification for folding box board, uncoated.

†Methods of sampling and test for paper and allied products, Part I (*revised*).

‡Methods of test for paper and pulp based packaging materials, Part II.

§Specification for paraffin wax.

3.6 Toxicity — The composition of the board, ink, coating materials and adhesive shall be such as not to introduce into the product packed any substance which is injurious to health or which might otherwise lead to infringement of the Prevention of Food Adulteration Act, 1954 and the Regulations made thereunder.

4. DIMENSIONS

4.1 The recommended inside dimensions of the cartons are as follows (*see also* Fig. 1):

	300-ml Carton	*500-ml Carton*	*1 000-ml Carton*
Length *L*, mm	113	152	152
Width *W*, mm	75	97	97
Height *H*, mm	38	38	76

4.1.1 A tolerance of ± 1·0 mm shall apply to these dimensions.

5. DEEP-FREEZING

5.1 The waxed board carton shall withstand deep-freeze conditions (−35°C) for a period of 30 days.

6. PREFOLDING

6.1 In order to produce suitable forming of the carton, the prefolding shall be such that the glue seams are square and glue spots are absent.

7. PACKING AND MARKING

7.1 Packing — The cartons shall be supplied in collapsed form and ready to use after erection. They shall be packed in protective transit containers as agreed to between the supplier and the purchaser.

7.2 Marking

7.2.1 *Individual Cartons* — Each carton shall be marked with the following information as required by the purchaser in respect of the ice-cream to be packed in it:

a) Trade-mark or description or both;
b) Manufacturer's or packer's name and address;
c) Batch or code number; and
d) Any other information required by the Prevention of Food Adulteration Rules, 1955.

7.2.2 *Transit Containers* — Each protective transit container shall be marked with the following information in respect of the cartons packed in it:

a) Name or trade-mark of the manufacturer;

b) Name of the product to be packed, if required;

c) Batch number; and

d) Date or year of manufacture.

7.2.3 The cartons and transit containers may also be marked with the ISI Certification Mark.

NOTE — The use of the ISI Certification Mark is governed by the provisions of the Indian Standards Institution (Certification Marks) Act and the Rules and Regulations made thereunder. The ISI Mark on products covered by an Indian Standard conveys the assurance that they have been produced to comply with the requirements of that standard under a well-defined system of inspection, testing and quality control which is devised and supervised by ISI and operated by the producer. ISI marked products are continuously checked by ISI for conformity to that standard as a further safeguard. Details of conditions under which a licence for the use of the ISI Certification Mark may be granted to manufacturers or processors, may be obtained from the Indian Standards Institution.

APPENDIX A

(*Clause* 3.1.3)

METHOD FOR DETERMINATION OF WAX CONTENT

A-0. PRINCIPLE

A-0.1 A known amount of waxed-board cuttings is extracted with carbon tetrachloride in a Soxhlet apparatus. The extract is evaporated to dryness and the residue re-extracted with alcoholic potassium hydroxide and evaporated to dryness. The dried mass is then dissolved in water and petroleum ether and the two layers are separated. The petroleum ether layer is evaporated to dryness and the residue weighed.

A-1. APPARATUS

A-1.1 Soxhlet Apparatus

A-1.2 Separating Funnel

A-2. REAGENTS

A-2.1 Carbon Tetrachloride

A-2.2 Alcoholic Potassium Hydroxide Solution — approximately 0·5 N.

A-2.3 Petroleum Ether—boiling range 40 to 60°C.

A-3. PROCEDURE

A-3.1 Weigh accurately about 10 g of the specimen, cut it into strips and give numerous small crosswise folds to each strip. Extract the strips in a Soxhlet apparatus with carbon tetrachloride for 4 hours or until the wax is all removed.

A-3.2 Evaporate the extract to dryness on a water-bath, add 25 ml of alcoholic potassium hydroxide solution and again evaporate to dryness. Cool the residue, take it up with petroleum ether and water (*see* Note), and transfer to a separating funnel. Shake the contents of the funnel thoroughly and then allow the two layers to separate completely. Draw off the water layer into another separating funnel.

NOTE — The volume of petroleum ether should be about 25 ml and that of water about 150 ml. The water should contain a small amount of sodium chloride to prevent emulsification.

A-3.3 Re-extract the water layer one or more times, as may be found necessary, with fresh 25-ml aliquot of petroleum ether.

A-3.4 Wash the petroleum ether extract obtained as in **A-3.2** and **A-3.3** with fresh 100-ml aliquots of water until the water layer is perfectly clear. Addition of a concentrated solution of sodium chloride may be found necessary while washing.

A-3.5 Transfer the petroleum ether extract to a weighed evaporating dish or flask and evaporate to dryness. Dry at 103 ± 2°C for 1 hour and weigh.

A-4. CALCULATION

A-4.1 Calculate the wax content of the board by the following formula:

$$\text{Wax, percent by mass} = \frac{100\,(W_3 - W_2)}{W_1}$$

where

W_3 = mass in g of the evaporating dish or flask with residue (**A-3.5**),

W_2 = tare in g of the evaporating dish or flask (**A-3.5**), and

W_1 = mass in g of the specimen taken for the test (**A-3.1**).

APPENDIX B

(*Clause* 3.1.4)

DETERMINATION OF STIFFNESS OF WAXED BOARD

B-0. PRINCIPLE

B-0.1 One end of a rectangular test piece is gripped and a bending force is applied to the test piece at a distance of 50 mm from the grip. The bending moment exerted by the force for deflecting the test piece through an angle of 15° is measured.

B-1. APPARATUS

B-1.1 Any instrument which is capable of applying a bending force to the test piece and measuring the bending moment in gf.cm, and is provided with jaws for gripping one end of the test piece across full width with the length of the portion gripped not less than 13 mm, and is complying with the following requirements may be used:

Bending angle	15° ± 10′
Bending length	50 ± 2·50 mm
Rate of bending	15° in not less than 2·5 seconds and not more than 30 seconds

B-2. SAMPLING AND CONDITIONING

B-2.1 Representative samples shall be drawn and conditioned as given in **3** and **5** respectively of IS: 1060 (Part I)-1966*.

B-3. PROCEDURE

B-3.1 Cut a minimum of 16 test pieces measuring 38 ± 0·3 mm in width and minimum 70 mm in length from each of the machine and cross directions of each specimen.

B-3.2 Deflect each test piece, gripping it firmly in the jaws of the instrument, through an angle 15° to one side of the unstressed position and then immediately bring the test piece to its original position and deflect it through an angle of 15° to the other side of the unstressed position. In each direction, read the bending moment as soon as the 15° deflection is reached.

---

*Methods of sampling and test for paper and allied products, Part I (*revised*).

B-3.3 When the instrument employed is so designed that the deflection is possible to only one side of the unstressed position, for each of the machine and cross directions drawn double the number of test pieces specified in **B-3.1** and test half of them with one particular face of the board towards the direction of deflection and the other half with the other face. Do not re-use any test piece after it has been removed from the instrument jaws.

B-3.4 Record the readings separately for the machine and cross directions.

B-4. CALCULATION

B-4.1 For each of the machine and cross directions, calculate the arithmetic mean of the readings correct to one place of decimal and report it as the stiffness in gf.cm of the board for that direction.